Claims

What is claimed:

1. A method for controlling the flow of data in a base transceiver station comprising:

a) providing first and second upstream devices;

b) providing a downstream device; and

c) enabling simultaneous communication between the downstream device and the first and second upstream devices.

2. The method of claim 1 wherein the first and second upstream devices each comprise a base transceiver station manager.

3. The method of claim 2 wherein the downstream device comprises multiple independent downstream devices.

4. The method of claim 3 wherein each downstream device comprises a channel module.

5. The method of claim 3 wherein the first and second base transceiver station managers include redundancy capabilities.

6. The method of claim 4 wherein the channel module comprises a backplane interface wherein the backplane interface is independently coupled to each base transceiver station manager.

7. The method of claim 6 wherein the backplane interface transmits and receives data to and from the first and second base transceiver station managers simultaneously via independent data paths.

8. The method of claim 7 wherein the backplane interface comprises a clock reference selection circuit and a data path multiplexor.

9. The method of claim 8 wherein the clock reference selection circuit is utilized to immediately switch to the first or second base transceiver station manager upon detection of a failure of the first or second base transceiver station manager.

10. The method of claim 8 wherein the backplane interface further comprises a data path de-multiplexor.

11. The method of claim 7 wherein the data comprises a data frame structure.

12. The method of claim 11 wherein the data frame structure comprises a frame sync portion, a provisioning information portion, a control portion and a payload portion.

13. The method of claim 12 wherein the data frame structure is in a table format.

14. The method of claim 13 wherein the table format comprises seven columns and ten rows.

15. A wireless communication system comprising:

at least one subscriber unit; and

at least one base transceiver station, the base transceiver station transmitting and receiving signals to and from the at least one subscriber unit, the at least one base transceiver station comprising:

a first upstream device;

a second upstream device coupled to the first upstream device; and

a downstream device coupled to the first and second upstream devices wherein the downstream device comprises means for enabling simultaneous communication between the downstream device and the first and second upstream devices.

16. The system of claim 15 wherein the first and second upstream devices each comprise a base transceiver station manager.

17. The system of claim 16 wherein the downstream device comprises multiple independent downstream devices.

18. The system of claim 17 wherein each downstream device comprises a channel module.

19. The system of claim 18 wherein the first and second base transceiver station manager include redundancy capabilities.

20. The system of claim 18 wherein the channel module comprises a backplane interface wherein the backplane interface is independently coupled to each base transceiver station manager.

21. The system of claim 20 wherein the backplane interface comprises means for transmitting and receiving data to and from the first and second base transceiver station managers simultaneously via independent data paths.

22. The system of claim 21 wherein the means for receiving data is coupled to a clock reference selection circuit and a data path multiplexor.

23. The system of claim 22 wherein the clock reference selection circuit is utilized to immediately switch to the first or second base transceiver station manager upon detection of a failure of the first or second base transceiver station manager.

24. The system of claim 22 wherein the means for transmitting data is coupled to a data path de-multiplexor.

25. The system of claim 21 wherein the data comprises a data frame structure.

26. The system of claim 25 wherein the data frame structure comprises a frame sync portion, a provisioning information portion, a control portion and a payload portion.

27. The system of claim 26 wherein the data frame structure is in a table format.

28. The system of claim 27 wherein the table format comprises seven columns and ten rows.

29. A base transceiver station for use in a wireless communication system including:

a first upstream device;

a second upstream device coupled to the first upstream device; and

a downstream device coupled to the first and second upstream devices wherein the downstream device comprises means for enabling simultaneous communication between the downstream device and the first and second upstream devices.

30. The base transceiver station of claim 29 wherein the first and second upstream devices each comprise a base transceiver station manager.

31. The base transceiver station of claim 30 wherein the downstream device comprises multiple independent downstream devices.

32. The base transceiver station of claim 31 wherein each downstream device comprises a channel module.

33. The base transceiver station of claim 32 wherein the first and second base transceiver station manager include redundancy capabilities.

34. The base transceiver station of claim 32 wherein the channel module comprises a backplane interface wherein the backplane interface is independently coupled to each base transceiver station manager.

35. The base transceiver station of claim 34 wherein the backplane interface comprises means for transmitting and receiving data to and from the first and second base transceiver station managers simultaneously via independent data paths.

36. The base transceiver station of claim 35 wherein the means for receiving data is coupled to a clock reference selection circuit and a data path multiplexor.

37. The base transceiver station of claim 36 wherein the clock reference selection circuit is utilized to immediately switch to the first or second base transceiver station manager upon detection of a failure of the first or second base transceiver station manager.

38. The base transceiver station of claim 36 wherein the means for transmitting data is coupled to a data path de-multiplexor.

39. The base transceiver station of claim 34 wherein the data comprises a data frame structure.

40. The base transceiver station of claim 39 wherein the data frame structure comprises a frame sync portion, a provisioning information portion, a control portion and a payload portion.

41. The base transceiver station of claim 40 wherein the data frame structure is in a table format.

42. The base transceiver station of claim 41 wherein the table format comprises seven columns and ten rows.

43. A data frame structure for use in a wireless communication system, the wireless communication system including a first upstream device, a second upstream device and a downstream device, the data frame structure comprising:

a frame sync portion;

a provisioning information portion;

a control portion; and

a payload portion wherein the data frame structure facilitates a simultaneous bi-directional flow of data between the downstream device and the first and second upstream devices.

44. The data frame structure of claim 43 wherein the data frame structure is in a table format.

45. The data frame structure of claim 44 wherein the table format comprises seven columns and ten rows.